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### **REMARKS**

In response to the non-final Office Action mailed March 9, 2006, the Attorney for the Assignee submits the present amendments and remarks. Claims 1-10, and 41-49 were rejected by the prior Office Action. Claims 1, 2, 4, 41-46, and 48-49 are amended by the present response, and claims 1-10 and 41-49 remain pending in the present application. The Office Action objected to claims 42-46, 48, and 49 since these claims depended from cancelled claim 40. With the present amendment, claims 42-46 and 48-49 have been amended to depend from pending claim 41. The present amendment and response is believed to traverse the Office Action rejections and objections, and allowance of the pending claims is kindly requested.

#### **I. Objections to the Specification**

The Office Action objected to the specification for the use of the mark "KOSA, Type 792", and the mark "TREVIRA", without a description of the material. The specification has been amended to include a description of "KOSA, Type 792" and "TREVIRA". The properties and information describing the materials would be recognized by one skilled in the art, and have been added for clarification of the references to these materials. No new matter is believed to have been added with this amendment.

The Office Action further objected to the specification since it did not provide an antecedent basis for the term "substrate." The objection is traversed in light of the amendment of claims 1 and 41, deleting the term "substrate."

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## **II. Rejections under 35 U.S.C. §112**

### **First Paragraph**

The Office Action rejected claims 1-10 and 41-49 under 35 U.S.C. §112, first paragraph because the specification did not provide enablement for all materials which would meet the claimed property requirements. The specification has been amended to include a description of the materials “KOSA, Type 792” and “TREVIRA”. The properties and information describing the materials would be recognized by one skilled in the art, and have been added for clarification of the references to these materials. No new matter is believed to have been added with this amendment.

The Office Action further rejected claims 1-10 and 41-49 under 35 U.S.C. §112, first paragraph because the specification did not provide enablement for materials suitable for use as a “substrate.” The rejection is believed to be traversed in light of the amendment of claims 1, 2, 41, and 42 deleting the term “substrate.”

### **Second Paragraph**

The Office Action further rejected claims 1-10 and 41-49 under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter. Specifically, the Office Action states that claims 1 and 41 recite physical properties of yarns, without setting forth structural or chemical characteristics of the yarns.

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Attorney for the Assignee respectfully submits that the specification does provide structural and chemical characteristics of the yarn, on page 14, line 1 through page 17, line 11. Also, the specification has been amended to provide more detail on the materials described as "KOSA, Type 792" and "TREVIRA". The properties and information describing the materials would be recognized by one skilled in the art, and have been added for clarification of the references to these materials. No new matter is believed to have been added with this amendment. Thus, the Office Action rejection is believed to be traversed.

The Office Action further rejected claims 1 and 41 under 35 U.S.C. §112, second paragraph for containing the element "substrate." The Office Action suggested appropriate claim language for claims 1 and 41, and the claims have been amended to include the suggested language by deleting the term "substrate". The Office Action rejection is believed to be traversed.

The Office Action further rejected claims 4 and 44 under 35 U.S.C. §112, second paragraph because the claims refer to yarns "positioned generally parallel to a longitudinal axis of the second layer and side-by-side and together formed into woven fabric," and "it is not clear what structure, if any, could possess all of the claimed features at the same time." Claims 4 and 44 have been amended, and the Office Action rejection is believed to be traversed.

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### III. Rejections under 35 U.S.C. §102/103 to *Blackmore et al.*

The Office Action rejected claims 1, 3, 10, 41, and 43 under 35 U.S.C. §102(b) as being anticipated by, or in the alternative, under 35 U.S.C. §103(a) as unpatentable over *Blackmore et al.* (U.S. Pat. No. 5,695,373). The Office Action states that *Blackmore et al.* includes a first layer of continuous filament polyester yarns in a range from about 50 to 2000 denier, and that while *Blackmore et al.* does not recite the creep or percent elongation, the properties are presumed to be inherent in a polyester filament having a denier of about 50 to about 2000. The Office Action rejection is respectfully traversed for at least the following reasons.

*Blackmore et al.* relates to a preformed unitary composite for bituminous roofing membranes. Specifically, *Blackmore et al.* relates to a large sheet of material that is unrolled and used on top of a roof. There is no motivation, teaching, or suggestion to use the material from *Blackmore et al.* for use as a composite restraint strap for securing freight. The composite for roofing in *Blackmore et al.* is therefore non-analogous art.

Moreover, the material in *Blackmore et al.* could not be used as a composite restraint strap for securing freight, because the intended function of the roofing membrane could be damaged, or in the worse case, destroyed. If the composite in *Blackmore et al.* were used as a composite restraint strap for securing freight, then the composite would break, because the material in *Blackmore et al.* is intended for relatively low tensions and elongations, while the claimed invention can withstand relatively higher tensions and elongations. *Blackmore et al.* teaches a composite comprising a first layer of a non-woven grid of continuous filament

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polyester yarn, and a second layer of a lightweight, preformed fiberglass mat. *See generally*, col. 4, ll. 42-64. *Blackmore et al.* discusses the prior art, where typically 6 to 8 weights of 3 to 5 pounds are used to apply tension to the yarns. The material described in *Blackmore et al.*, however, only uses "2 to 3 weights of 3 to 5 points each" to tension the yarn.

"Otherwise, we have found that the fabric will tend to stretch. In more detail, we prefer to maintain this tension to achieve no more than 1.5% (roughly 1/4" over 18") stretch of the yarns during the scrim making process. We have found that this is an important factor in suppressing curl during and after forming of the membrane using our composite." Col. 6, ll. 35-44. The second layer of fiberglass mat in *Blackmore et al.* is therefore believed to only be able to withstand relatively low levels of tension and elongation. *Blackmore et al.* states that while the "fiberglass has advantageous properties of tensile strength," the strength is only "for shorter elongation." Col. 1, ll. 13-15, col. 4, ll. 54-56. Therefore, *Blackmore et al.* teaches away from relatively high tensions and elongation of the claimed invention. *Blackmore et al.* further discloses an elongation limit of only 1.5% during the scrim making process. It is doubtful that the roofing composite in *Blackmore et al.* could withstand any elongation when actually in use with the fiberglass mat, and most certainly could not withstand elongation above 1.5%.

On the other hand, the claimed invention is able to withstand relatively high tensions and elongation without breaking. Claims 1 and 41 claim elongation in the range of about 2.5% to about 4.7%, and 2%, respectfully. Also, in embodiments of the current invention, there is a break load of about 26.6 pounds, or 23.1 pounds, or 17.7 pounds. P. 14, l. 19; p.

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15, ll. 4, 7. Since *Blackmore et al.* teaches away from high levels of elongation and tension, *Blackmore et al.* does not anticipate or render obvious the claimed invention.

The Office Action also rejected claims 3, 10, and 43 in view of *Blackmore et al.* Claims 3, 10, and 43 are ultimately dependent from claims 1 and 41 for which arguments have been provided above. If the underlying independent claims are allowable over the cited reference, then the corresponding dependent claims should also be allowable.

#### **IV. Rejections under 35 U.S.C. §103 to Bullock**

The Office Action rejected claims 1-3, 5-10, 41-43, and 45-49 under 35 U.S.C. §103(a) as being unpatentable to *Bullock* (U.S. Pat. No. 6,089,802). The Office Action states that the adhesive-coated polyester strip, preferably a film of spunbonded olefin, is analogous to the claimed second layer. The Office Action states that the strip may be inlaid with polyester or polyethylene fiber reinforcement strands, which are analogous to the claimed first layer. The Office Action rejections are respectfully traversed for at least the following reasons.

##### **Claim 1**

Claim 1 requires a “first layer comprising a plurality of strands comprising yarn having an elongation characteristic within the range of about 2.5 percent to about 4.7 percent before breaking and a creep of less than about 2 percent after elongation.” The specified creep and percent elongation of the claimed invention has several advantages over the prior art. Specifically, the “creep allows the composite restraint straps 22 to restrain freight

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without need of secondary straps to hold the composite restraint straps 22 in place.” Page 15,

11. 16-18. Furthermore,

“many straps are known in the art that require pieces of tape for holding a strap in position in the event that the strap over-elongates and slack is formed in the strap because its material does not recover well. Without these pieces of tape, the strap falls out of position. In contrast, the specified recoverability of this invention, as shown by the small amount of creep, eliminates this need for tape to hold the strap in position.”

Page 15, l. 21 through page 16, l. 4.

*Bullock* does not describe or suggest a strap having particular percent elongation or creep.

All that *Bullock* discloses is that the restraint system is “resistant to axial lengthening,” col. 3,

l. 60, without discussing any mechanical properties. Also, the advantages that are provided

by the percent elongation and creep of the claimed invention are not described in *Bullock*.

Accordingly, in contrast to the current invention the restraint system of *Bullock* does not have the advantages of a specific amount of percent elongation and creep.

The Office Action further rejected claims 2, 3, and 5-10 under 35 U.S.C. §103(a) as being unpatentable under *Bullock*. These claims are ultimately dependent from claim 1, for which arguments of patentability have been provided above. If the underlying independent claim is allowable over *Bullock*, then the corresponding dependent claims should also be allowable.

#### **Claim 41**

Claim 41 requires “a first layer comprising a plurality of strands comprising yarn having a denier within the range of about 1000 to 1500 and a creep of less than about 2 percent after elongation.” The Office Action further states that regarding the denier values in

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claim 41, absent a showing of unexpected results, it would have been obvious for one of ordinary skill in the art to determine, without undue experimentation, the optimal polyester reinforcing strands. The rejection is traversed for at least the following reasons.

To the extent that claim 41 includes the element of "creep of less than about 2 percent after elongation," arguments of patentability have been provided above with respect to claim 1.

To the extent that claim 41 includes the element of "a denier within the range of about 1000 to 1500," *Bullock* does not disclose or suggest such a denier value, or any mechanical properties of the reinforcement strands. Yarns with different denier values provide different mechanical properties. Specifically, "yarn having a denier of 1500 has an elongation percentage of ranging from about 2.5% to about 3.9%," page 14, ll. 15-16, and "yarn having a denier of 1300 has a creep of less than about 2 percent," page 15, ll. 2-3, and finally "yarn having a denier of 1000 has a creep of less than about 2 percent." Page 15, ll. 5-6. The applicants obtained this data through mechanical testing. Specifically, the yarn was tested:

"using a break load test on a tensile tester with the yarn having a twist of 2 turns per inch. The test speed was 12 inches per minute. The gage length was 10 inches and the yarn was pre-tensioned to 30 grams. The hot air shrinkage data was collected using a hot air oven without preload with a dwell time of 30 minutes. Further, the shrinkage data was collected using a 0.05 grams per denier preload for 3 minutes."

Page 15, ll. 9-14.

The Office Action states that "it would have been obvious for one of ordinary skill in the art to determine, without undue experimentation, the optimal polyester reinforcing strands." It is not predictable what would happen if the denier value of the strands in *Bullock*



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had the denier value range of the claimed invention. The outcome of so modifying the restraint system in *Bullock* is purely speculative. Furthermore, Applicants performed mechanical testing to determine appropriate ranges of denier values. Applicants respectfully submit that one of ordinary skill in the art could not have determined, without undue experimentation, the optimal polyester reinforcing strands.

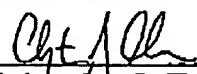
The Office Action further rejected claims 42-43 and 45-49 under 35 U.S.C. §103(a) as being unpatentable under *Bullock*. These claims are ultimately dependent from independent claim 41, for which arguments of patentability have been provided above. If the underlying independent claim is allowable over *Bullock*, then the corresponding dependent claims should also be allowable.

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### CONCLUSION

Claims 1-10 and 41-49 are pending in the present application, and claims 1, 2, 4, 41-46, and 48-49 are amended by the present response. For at least the above reasons, Applicants respectfully requests allowance of claims 1-10 and 41-49 and issuance of a patent containing these claims in due course. If there remain any additional issues to be addressed, the Examiner is urged to contact the undersigned attorney at 404.815.6500.

Respectfully submitted,

  
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